UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/541,631	04/03/2000	Alan Balkany		4315

7590   11/30/2004

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EXAMINER
TO, BAOQUOC N

ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/541,631	BALKANY, ALAN
	Examiner	Art Unit	
	Baoquoc N To	2162	

-- The *MAILING DATE* of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>31 August 2004</u>.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-5,11,12 and 16</u> is/are pending in the application.

4a) Of the above claim(s) <u>6-10, 13-15 and 17</u> is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-5,11,12 and 16</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1, 3, 4 and 12 are amended and claims 6-10, 13-15 and 17 are canceled.

Claims 1-5, 11-12 and 17 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-5, 11-12 and 16 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Bugajski et al. (US. Patent No. 5,592,667).

Regarding on claim 1, Bugajski teaches a method for storing a plurality of parallel

data element sequences comprising:

(a) creating a dictionary of unique values for each of said data element

sequences (dictionary created for each field), wherein each dictionary contains a

numeric index for each unique value (each field value is associated with numerical

index values...however, leads to the creation of a table of associative memories whose

two components are indexes to the memory tables of the nodes corresponding to the

derivative branches or "children") (col. 9, lines 61);

(b) forming an n-aray tree with leaf and interior nodes (each leaf and non-

terminal leaf in the tree 105 and 108) (col. 9, lines 57-58) where:

(1) each leaf node corresponds to one of said dictionaries (a dictionary

is created for each field represented the terminal or leaf nodes) (col. 9, lines 61-65),

(2) each interior node (each none-leaf or non-terminal node in the tree (such as 105,

108 etc.) associates a numeric index with tuples of numeric indexes from

the other subordinate leaf or interior nodes (braches or children) (col. 9, lines 56-61).

Bugajski does not explicitly teach (3) interior nodes are capable of storing one or more

sequences of mutually-consecutive tuples distinctly from the other tuples. However,

Bugajski teaches "broadly, a dictionary is created for each field wherein each field value

is associated with a numerical index value and stored in the dictionary. Each non-leaf

node or non-terminal node in the tree (such as 105 and 108, etc.), however, leads to the

creation of a table of associative memory tables of the nodes corresponding to the

derivative branches or "children," whether terminal or non-terminal nodes. For example,

a dictionary is created for each field represented by the terminal or leaf nodes such as

serial number, model year, plant codes and so forth, whereas each non-terminal node

leads to the creation of a table of associative memories whose components are indexes

to the memory tables of the node's two children" (col. 9, lines 54-67). This teaches

each of the interior node store the one or more sequences mutually-consecutive tuples

distinctly from the other tuples, wherein node 106 stores in formation of leaf-node tire

branch and interior node 150 stored plant code. Therefore, it would have been obvious

to one ordinary skill in the art at the time of the invention was made to modify Bugajski's

system to include each of the interior node store the one or more sequences mutually-

consecutive tuples distinctly from the other tuples, wherein node 106 stores in formation

of leaf-node tire branch and interior node 150 stored plant code in order to efficiently

store and retrieve of records.

Regarding on claim 2, Bugajski teaches the method recited in claim 1, wherein

each unique value of a leaf node or each unique tuple of an interior node is associated

with a count of the number of times that values or tuple of values occurred in the parallel

data element sequences (col. 4, lines 56-67 and col. 4, lines 1-5).

Regarding on claim 3, Bugajski teaches the method recited in claim 1 and further

comprising:

       (a)   defining a gate field in one or more interior nodes (col. 12, lines 63-

67);

       (b)   setting the value of said gate field in each said interior node, to

indicate which of said interior node's branches lead to leaf nodes in said subset (col. 12,

lines 63-67);

       (c)   following paths that lead to said leaf nodes (col. 12, lines 63-67),

and

       (d)   processing said leaf nodes encountered (col. 12, lines 63-67).

Regarding on claim 4, teaches the method recited in claim 1 and further

including at least one of said tuple sequence in the representation of one or more of

said tuple sequences.

Regarding on claim 5, Bugajski teaches the method of claim 1 further including a

method for arranging said n-ary tree comprising the steps of:

       (a)   defining a problem space comprising:

(1)   a set of states such that each states contains a set of leaves and zero or more interior nodes, each with two or more other nodes as children (col. 9, lines 54-67),

(2)   a value function, giving a metric ranking of the value of any state's design (col. 9, lines 54-67),

(b)   defining one or more operators that transform one state to another (col. 9, lines 54-67), and

(c)   searching the problem space, starting from an initial state and applying operators to move to other states until a state with an acceptable n-ary tree design is reached (col. 9, lines 54-67).

Regarding on claim 11, Bugajski teaches the method of claim 1, where said interior nodes are capable of storing one or more of said tuple sequences using a single tuple in combination with said tuple sequence length (col. 4, lines 35-44).

Regarding on claim 12, teaches the method of claim 3, further including using the length of at least one of said tuple sequences in the representation of one or more of said tuple sequences (col. 4, lines 35-44).

Regarding on claim 16, Bugajski teaches the method recited in claim 5, where said method uses an estimate of interior node size, from a function of the sizes of said interior node's child nodes (col. 11, lines 1-16).

Conclusion

3.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Contact Information

4.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Baoquoc N. To whose telephone number is at 571-272-

4041 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached

on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Breene can be reached at 571-272-4107.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231.

The fax numbers for the organization where this application or proceeding is

assigned are as follow:

(703) 872-9306 [Official Communication]

Hand-delivered responses should be brought to:

Crystal Park II

2121 Crystal Drive

Arlington, VA 22202

Fourth Floor (Receptionist).

Baoquoc N. To

Nov 22, 2004

JEAN M. CORRIELUS
PRIMARY EXAMINER